

WHAT IS CLAIMED IS:

1. A particle size distribution measuring apparatus, comprises

an irradiating part which irradiates laser light;

a flow cell provided in a flow path through which a sample solution flows, wherein the flow cell comprises two ports to be an inlet and an outlet for the sample solution on a top surface of the flow cell, and a separating element positioned between the two ports of the flow cell in a downward direction in such a way that the sample solution introduced from either one of the two ports into the flow cell is guided out of another port through the vicinity of a flow cell bottom, and that a lower section of the separating element having an inclined surface so as to decrease in width toward a bottom end thereof; and

a detector for detecting light from the irradiating part, said light scattered by particles disbursed within the sample solution.

2. A particle size distribution measuring apparatus, comprising:

a pump for circulating a sample solution;

a flow cell in the flow path through which the sample solution circulates;

an irradiating part which irradiates laser light to the flow cell;

a detector for detecting light from the irradiating part and scattered by particles located in the sample solution contained in the flow cell;

wherein a sample solution circulation system is constructed so as to reverse a flow direction of the sample solution which flows through the flow cell prior to a measurement of the particle size distribution performed by irradiating laser light to the flow cell from the irradiating part.

3. A particle size distribution measuring apparatus, comprising:

a flow path through which a sample solution flows;

a supplying part in communication with said flow path, said supplying part supplying said sample solution;

a pump in communication with said flow path, said pump capable of flowing said sample solution through said flow path;

a draining part in communication with said flow path, said draining part capable of draining said sample solution from said flow path;

an injecting part in communication with said flow path, said injecting part capable of injecting at least one fluid into said flow path;

a measuring part comprising:

a) a flow cell in communication with said flow path and capable of containing said sample solution therein and having an inlet and an outlet formed on the top thereof;

b) an irradiating part capable of emitting laser light, wherein said laser light irradiates said sample solution within said flow cell;

c) a detector capable of detecting laser light.

4. The device of claim 3 wherein said pump comprises:

a normal operation wherein said pump is capable of flowing said sample solution in a first direction;

a stop operation wherein said pump is capable of stopping the flow of said sample solution through said flow path; and

a reverse operation wherein said pump is capable of flowing said sample solution in a second direction opposite to said first direction.

5. The device of claim 3 wherein said injecting part inject a diluting material into

said flow path.

6. The device of claim 3 wherein said injecting part inject a washing material into said flow path.

7. The device of claim 3 wherein said flow cell further comprises a separating member positioned therein.

8. The device of claim 3 wherein said flow cell transmits said laser light.

9. The device of claim 3 wherein said flow cell is detachable from said flow path.

10. The device of claim 3 wherein said inlet is capable of receiving a thermometer therein.

11. The device of claim 3 wherein said detector is capable of detecting laser light scattered by particles within said sample solution, said sample solution positioned within said flow cell.

12. A method of measuring particle size distribution, comprising:

flowing a sample solution in a first direction through a flow path and a flow cell;

stopping said flow of said sample solution within said flow path and said flow cell;

flowing said sample solution in a second direction through said flow path and said flow cell, wherein said second direction is opposite said first direction;

stopping said flow of said sample solution within said flow path and said flow cell;

irradiating said sample solution within said flow cell with laser light from an irradiating part;

detecting an amount of scattered light from sample particles disbursed within said sample solution within said flow cell; and

measuring a particle size distribution within said particles disbursed within said sample solution based on said scattered light.